

by electrons emitted by regions 42 is located in the active intermediate portion of enclosure 32 when those atoms undergo ionization. Because the anode in light-emitting device 22 is at a high electrical potential relative to the voltages present in the electron-emitting device 20, the positively charged inert-gas ions are attracted to electron-emitting device 20. Relative to the electrons traveling from electron-emitting device 20 toward light-emitting device 22, the positively charged inert-gas ions thereby travel backward toward electron-emitting device ~~election-emitting devise~~ 20.

[0049] For the case where the inert gas ~~inert~~ gas in sealed enclosure 32 is constituted with helium, the partial pressure of the helium is normally at least 2×10^{-5} torr. The helium partial pressure is preferably at least 5×10^{-5} torr, more preferably at least 1×10^{-4} torr, and even more preferably at least 5×10^{-4} torr. The partial pressure of the helium in enclosure 32 is normally no more than 1×10^{-1} torr. The helium partial pressure is preferably no more than 5×10^{-2} torr, more preferably no more than 1×10^{-2} torr, and even more preferably no more than 5×10^{-3} torr.

[0053] For the case where the inert gas in sealed enclosure 32 consists of xenon or radon, the partial pressure of the xenon or radon is normally at least 5×10^{-7} torr, the minimum level given above for all the inert gas in enclosure 32. The xenon or radon partial pressure is preferably at least 1×10^{-6} torr, more preferably ~~preferable~~ at least 2×10^{-6} torr, and even more preferably at least 5×10^{-6} torr. The partial pressure of the xenon or radon in sealed enclosure 32 can be as high as 1×10^{-1} torr but is normally no more than 1×10^{-3} torr. The xenon or radon partial pressure is preferably no more than 5×10^{-4} torr, more preferably no more than 1×10^{-4} torr, and even more preferably no more than 5×10^{-5} torr.

[0056] As another variation, getter 26 can alternatively or additionally be located in the active image-producing region of the flat-panel CRT display in such a manner as to not interfere with the display's image-producing function. In that case, the material of getter 26 is typically distributed laterally in a relatively uniform manner across the display's active region. For instance, the getter material can be distributed in a relatively uniform manner across the top (upper surface in Fig. 1) of the active electron-emitting portion of electron-emitting device 20 as generally described in Curtin et al., U.S. patent application 09/698,696, 09/698,698, filed 27 October 2000. By having the getter material distributed across the top

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of the active electron-emitting portion, the volatized contaminant material that leaves electron-emissive regions 42 can be collected by getter 26 before that contaminant material leaves the immediate vicinity of regions 42. This improves the efficiency of the gettering process.

[0057] The material of getter 26 can likewise be distributed in a relatively uniform manner across the top (lower surface in Fig. 1) of the active light emitting portion of light-emitting device 22. See Cummings et al, U.S. patent application 09/823,872, filed 30 March 2001, now U.S. Patent 6,630,786 B2, as well as Curtin et al, U.S. patent application 09/698,696, cited above, for examples of how getter 26 is implemented in this way. As described in U.S. patent applications 09/823,872 and 09/698,696, candidate materials for getter 26 include magnesium, aluminum, titanium, vanadium, chromium, manganese, iron, cobalt, copper, zirconium, niobium, molybdenum, palladium, silver, barium, tantalum, tungsten, platinum, lead, thorium, magnesium oxide, chromium oxide, manganese oxide, cobalt oxide, nickel oxide, and lead oxide.

[0088] Contaminant piece 130 does not appear in Fig. 10b which illustrates the display of Fig. 8 at a later instance of time when the display is turned off. Hence, Fig. 10b shows how the display has been cleaned in accordance with the invention to remove contaminant 130 from electron-emissive element 94 on which contaminant 130 had earlier accumulated. During display operation, further contaminant material accumulates on electron-emissive elements 94. Item 132 in Fig. 10b represents a further piece of contaminant material that accumulates on one of elements 94. In the course of later display operation, further contaminant 132 + 130 is also removed from underlying element 94 as a result of ion etch process of the invention.

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